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# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : SEIKO EPSON CORP

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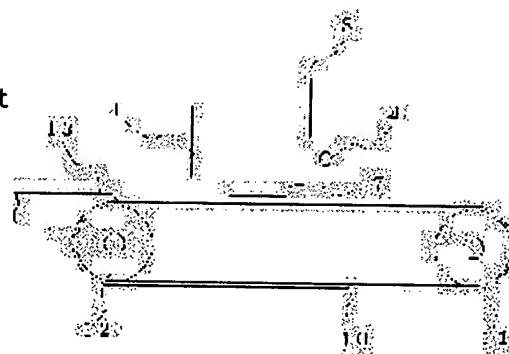
(72)Inventor : USUI MINORU

## (54) RECORDER

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To feed recording paper with high accuracy irrespective of the type of the recording paper.

**SOLUTION:** A recorder comprises a recording head 7 mounted, for dot formation, on a carriage 1 capable of reciprocation in a main scanning direction, and a recording medium feed mechanism 5 for feeding a recording medium in a subsidiary scanning direction. The recording medium feed mechanism 5 comprises an endless belt 10 having an adhesive layer at least over the obverse surface.



## LEGAL STATUS

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## CLAIMS

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[Claim(s)]

- [Claim 1] A recording device constituted by endless revolution member which said record-medium conveyance device equipped with an adsorption layer on a front face at least in a recording device equipped with a recording head which is carried in carriage which reciprocates to a main scanning direction, and forms a dot, and a record-medium conveyance device in which a record medium is conveyed in the direction of vertical scanning.
- [Claim 2] A recording device according to claim 1 with which claw part material for exfoliation is arranged at an exhaust port side of said record-medium conveyance device.
- [Claim 3] A recording device according to claim 1 with which said adsorption layer is constituted by adhesive rubber.
- [Claim 4] A recording device according to claim 1 with which said adsorption layer is constituted by electrification material.
- [Claim 5] A recording device according to claim 1 with which the concavo-convex section which adjusts a touch area with a record medium is formed in a front face of said adhesive layer.
- [Claim 6] A recording device given in a claim by which a cleaning member which sinks in water is prepared in a front face of said adsorption layer possible [ attachment and detachment ].

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the recording device and twist details which print a record medium by the recording head which carries out the regurgitation of the ink drop from a nozzle orifice at a form conveyance device.

[0002]

[Description of the Prior Art] It is used for printing of the print of the high quality of for [ commerce ], such as a poster, using the high level of the color printing engine performance of the ink jet type recording head in recent years. On the other hand, a recording device arranges a roller pair so that the upstream of the migration field of a recording head and the downstream may be inserted, and it is constituted so that the record form of a simple leaf may be conveyed in a predetermined pitch by one side of these roller pair.

[0003]

[Problem(s) to be Solved by the Invention] However, generally, since flexibility is low as compared with the record form for clerical work with the large and size of a record form, the conveyance precision of a record form falls by slipping between rollers etc., and a record medium to be printed in high quality has the problem that printing in the meant quality is difficult. Are concerned, and there is no place which this invention is made in view of such a problem, and is made into the object in the class of record form, and it is offering the recording device which can carry out paper feed in a high precision.

[0004]

[Means for Solving the Problem] It was made for an endless revolution member which said record-medium conveyance device equipped with an adsorption layer on a front face at least in a recording device equipped with a recording head which is carried in carriage which reciprocates to a main scanning direction in this invention, and forms a dot in order to solve such a problem, and a record-medium conveyance device in which a record medium is conveyed in the direction of vertical scanning to constitute.

[0005]

[Function] In order to hold a record form to a revolution member by adsorption power and to move a printing field, a slip of the record medium between rollers becomes that there is nothing.

[0006]

[Embodiment of the Invention] Then, based on the example illustrating the details of this invention, it explains below. Drawing 1 shows one example of the recording device of this invention, and it connects with a motor 3 through a timing belt 2, and carriage 1 is constituted by the cross direction of the record form which is guided at the guide member 4 and conveyed according to the record-medium conveyance device 5, i.e., a main scanning direction, so that both-way migration may be carried out.

[0007] A recording head 7 and the ink jet recording head which carries out the regurgitation of the ink drop from a nozzle orifice in this example are prepared, and the ink cartridge 8 which supplies ink to a recording head 7 is formed in the upper surface removable at the side which counters the record form of carriage 1.

[0008] Drawing 2 stretches the endless belt 10 with which this invention is the record-medium conveyance device 5 by which it is characterized, and equipped the front face with the adhesive layer at least on the rollers 11 and 12 arranged so that it might face across the both-way field of carriage 4, and is constituted, and the claw part material 13 which has turned over the record form is formed in the edge by the side of blowdown of a record form.

[0009] As shown in drawing 3, adhesive layer 10b of fixed thickness is formed in the front face of base material 10a of petit RUGOMU, an adhesion acrylic, etc., and the endless belt 10 is having the whole adhesion adjusted so that a record

form may be preferably held to a crevice and the degree which can exfoliate without being able to form the protruding line of constant pitch again, and being able to hold a record medium during a printing period, and damaging a record medium by the claw part material 13.

[0010] In this example, when head 20a of the record form 20 is forced on the endless belt 10 of the conveyance device 5, the record form 20 is fixed to the endless belt 10 by the adhesion of adhesive layer 10b ( drawing 4 (I)). If rollers 11 and 12 are driven in this condition, the record form 20 will be conveyed to a printing field, and the image and alphabetic character corresponding to print data will be printed by the recording head 7 ( drawing 4 (II)).

[0011] Since the record form 20 is held in this process at the adhesion of the endless belt 10, and it synchronizes to migration of an endless belt faithfully and moves, the paper feed error resulting from the slip at the time of conveyance by the roller pair does not arise.

[0012] If printing advances and head 20a of the record form 20 reaches the claw part material 13, the record form 20 will be discharged by the paper output tray which sequential exfoliation is carried out from the endless belt 10 with a pawl, and is not illustrated ( drawing 4 (III)).

[0013] Drawing 5 shows other examples of this invention, and the cleaning member 14 which can absorption hold water, such as sponge, is formed in the endless hair side of belt side possible [ attachment and detachment ] by the drive 15.

[0014] In this example, if it is made to \*\*\*\* to adhesive layer 10a and the conveyance device 5 is operated where water is included in the cleaning member 14 when the adhesion of adhesive layer 10a declines by printing of a large quantity, the adhesion of adhesive layer 10a will be reduced bywater, and extra jacket \*\*\*\* clearance of the paper powder adhering to a front face will be carried out at the Cree ring member 14.

[0015] In addition, in an above-mentioned example, although he is trying to fix a record form according to adhesion, the macromolecule insulating material in which frictional electrification is possible can constitute an adhesive layer, and the same operation can be acquired by arranging a friction means and electrification means, such as a corona discharge means, if needed.

[0016] Moreover, in an above-mentioned example, although the adhesive layer was formed as an endless belt, even if the field which counters a recording head forms in the front face of the roller of the path it can be considered mostly that is the flat-surface section, the same operation is done so.

[0017] Furthermore, in an above-mentioned example, although the case where it printed by the ink jet recording head was explained, even if it applies to the recording device which used recording heads of other format, such as a sublimation mold recording head, a thermal-transfer-recording arm head, and a wire impact recording head, it is clear to do the same operation so.

[0018]

[Effect of the Invention] As mentioned above, as explained, in this invention, it sets to the recording device equipped with the recording head which is carried in the carriage which reciprocates to a main scanning direction, and forms a dot, and the record-medium conveyance device in which a record medium is conveyed in the direction of vertical scanning. Since the record-medium conveyance device is constituted by the endless revolution member which equipped the front face with the adsorption layer at least, A record form can be held to a revolution member according to adhesion, a printing field can be moved, a slip of the record medium between rollers becomes that there is nothing like before, are concerned, there is nothing in the class of record medium, and paper feed of the record form can be carried out in a high precision.

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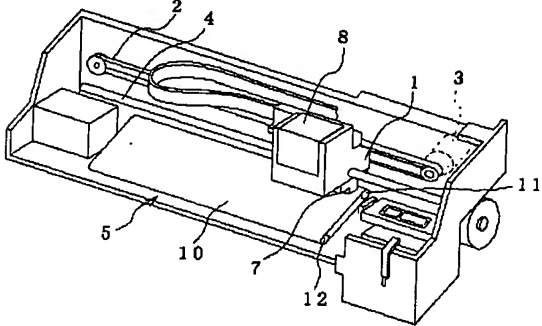
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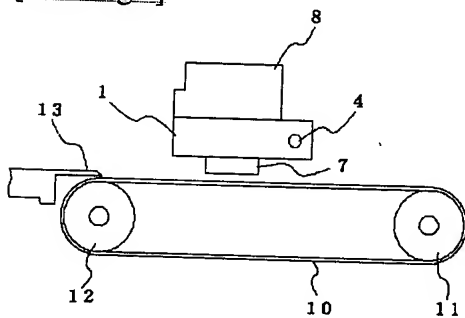
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## DRAWINGS

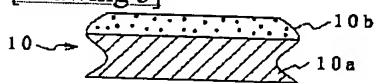
[Drawing 1]



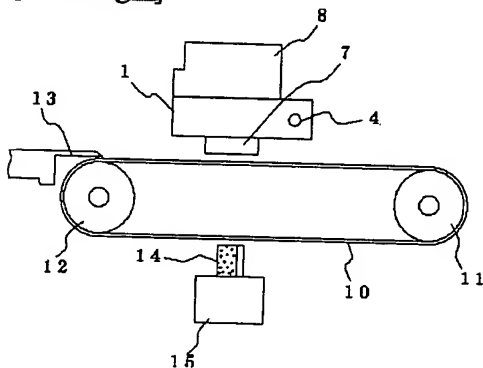
[Drawing 2]



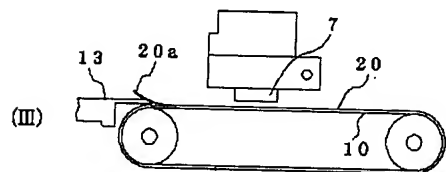
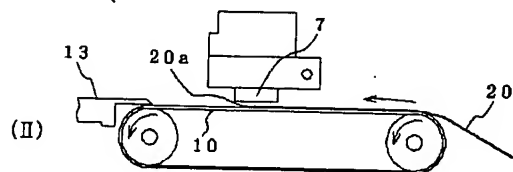
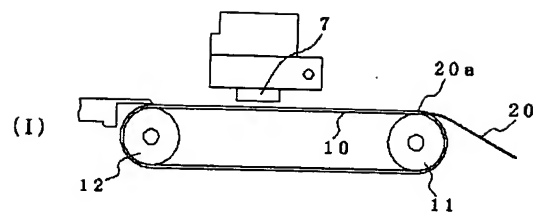
[Drawing 3]



[Drawing 5]



[Drawing 4]



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